

REMARKS

Claims 1-13 are pending. Claims 1, 7, and 10-13 have been previously presented. Claims 2-6, 8, and 9 are original. No new matter has been introduced by this response.

1. Summary of Telephonic Interview with the Examiner on August 25, 2009

The Applicants' representative appreciates the Examiner's time in a telephonic interview on August 25, 2009 regarding the present patent application. In addition to the information in the Examiner Interview Summary mailed September 2, 2009, the following is noted regarding the interview. While claim 1 was discussed specifically, claims 2-13 were discussed in general. The general thrust of the principal arguments presented is repeated in the arguments below.

The Examiner indicated that Applicants' arguments are persuasive and that the Huang reference probably would fail in view of the discussion during the interview.

2. Claim Rejections under 35 U.S.C. § 102

Claims 11-13 have been rejected under 35 U.S.C. § 102(b) over Huang (U.S. Pat. Pub. No. 2002/0136978), or under 35 U.S.C. § 102(e) over corresponding issued U.S. Pat. No. 6,855,501. The Applicants respectfully traverse these rejections based on the following remarks.

The Examiner asserts that Huang discloses a substrate having a support, a conductive layer on the support, a photoconductive layer, and a chemically functional layer, referring to the photoreceptor support comprising a cylinder, drum or belt; the chargeable particles; the charged carrier particles comprising zinc oxide; and the carrier particles, respectively (Office Action, pages 3-6). First, the carrier particles as taught in Huang cannot play the roles of both the photoconductive layer disposed on the conductive layer, and the chemically functional layer on the photoconductive layer, which are two separate layers as recited in independent claims 11-13.

Further, Huang expressly teaches that the chargeable particles and the charged carrier particles are part of a composition which is triboelectrically charged and attached to a selectively charged surface (151) (emphasis added). The attached particles are then transferred from the surface (151) to the target substrate (164) via printing (see paragraph 0013, lines 1-6; paragraph 0021, lines 1-15; and Fig. 7). In other words, these particles are not arranged in the shape of layers and let alone in any layer-by-layer structure, as recited in independent claims 11-13.

Also, contrary to the Examiner's assertion (final Office Action, page 11), the various layers as recited in independent claims 11-13 are part of the substrate. First, the substrate claims are apparatus claims. Thus it is implied that these layers are part of the substrate, and NOT, for example, unconnected parts in a kit. Secondly, the relationship between the various layers is expressly recited in the pending claims, for example, "a conductive layer on the support", "the photoconductive layer disposed on the conductive layer", and "a chemically functional layer on the photoconductive layer" as recited in independent claim 11 (emphasis added). Thus, these layers are part of the substrate, which is not taught by Huang. Rather, Huang expressly teaches that both the chargeable particles and the charged carrier particles are attracted to the surface (151) and then transferred to the target substrate (164). Accordingly, a person with ordinary skill in the art would not consider the chargeable particles and the charged carrier particles disclosed in Huang as part of the substrate under these circumstances.

Also, Huang does not teach or suggest any chemically reactive surface, a chemically active material, and a surface to which a binder molecule can be attached on the chemically functional layer disposed on the support, as required by independent claims 11-13 (emphasis added). As discussed above, the chemical compounds as taught in Huang, as part of the charged particles, are triboelectrically charged and attached to the surface (151), and then transferred from the surface (151) to the target substrate (164) via printing. The chemically reactive surface as taught in Huang (termini of growing polymer chains, or unreacted surface functional groups), however, are located on the target substrate (164) (see paragraph 0150, lines 2-7; and paragraph 0159, lines 1-6).

Huang thus expressly teaches that coupling reactions occur on the target substrate (164) (see also Figs. 1 and 7; and paragraphs 0152 – 0157). In other words, the chemically reactive surface, that is, the unreacted surface functional groups on the target substrate (164), as taught in Huang is separate from the photoreceptor support comprising a cylinder, drum or belt (the asserted substrate). Put in another way, the reactive groups as taught in Huang are not part of the asserted substrate, and thus cannot be a chemically reactive surface on the asserted chemically functional layer.

In view of the above, the Applicants respectfully submit that Huang does not teach all the claim limitations as recited in independent claims 11-13. Accordingly, the rejections against independent claims 11-13 are improper and should be withdrawn.

3. Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-10 have been rejected under 35 U.S.C. § 103(a) over Huang in view of Cabuz et al. (U.S. Pat. No. 6,184,608). The Applicants respectfully traverse these rejections based on the following remarks.

As discussed above in section 2, Huang does not teach or suggest a substrate having a support, a conductive layer on the support, and a chemically functional layer, the chemical functional layer on the dielectric layer, providing a protective layer for the dielectric layer and a chemically reactive surface for compounds deposited on the surface, as required by independent claim 1 and its dependent claims 2-10. Cabuz does not supply the elements missing from Huang compared to the pending claims. Accordingly, the rejection against independent claim 1, and thus the rejections against claims 2-10, which all depend from independent claim 1, are improper and should be withdrawn.

Further, as the Applicants argued previously, Cabuz is not an analogous art and should be disqualified as a reference. The Examiner asserts that “Cabuz is reasonably pertinent to the issue of forming layers of substrates and arrays”, and thus it is an analogous art (Office Action, page 13). However, as discussed previously, the thin metal films 31 functions as electrodes. There is no need for Cabuz to form a chemically

functional layer, as required by independent claim 1. In other words, Cabuz is not reasonably pertinent to the particular problem with which the applicant was concerned, that is, preparing a substrate having “a dielectric layer ... and a chemically functional layer on the dielectric layer”, as required by independent claim 1 (emphasis added).

Regarding claim 10, the Examiner asserts that “Huang teaches the *target substrate* can comprise a chemical functional layer”, which “can include reactive groups” (Office Action, pages 8-9; emphasis added). As discussed above in section 2, the Examiner has asserted that the photoreceptor support functions as the support as recited in independent claim 1. The fact that the target substrate (164) may have reactive groups which react with the transferred chemical compounds is irrelevant because the target substrate (164) is separate from the photoreceptor support comprising a cylinder, drum or belt (the asserted substrate). In other words, the reactive groups are not part of the asserted substrate. Accordingly, the rejection against claim 10 is improper and should be withdrawn.

4. Conclusion

In view of the above, the Applicants respectfully submit that the claims are in condition for allowance. The Examiner is kindly invited to contact the undersigned agent to expedite allowance.

Respectfully submitted,

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/Yuezhong Feng, Ph.D./

Yuezhong Feng, Ph.D.

Registration No. 58,657

Agent for Applicants

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, IL 60610
(312) 321-7738